

CLAIMS

What is claimed is:

1. A paper ejecting mechanism, comprising:
an ejecting roller which ejects a paper printed on by a printhead in an ejecting direction;
and

a paper stand installed under the ejecting roller which supports the paper when the ejecting roller is rotated in an ejecting direction, and drops the paper into an output tray when the ejecting roller is rotated in a reverse direction to the ejecting direction.

2. The paper ejecting mechanism of claim 1, wherein
the ejecting roller comprises:

a gear and

a shaft; and

the paper stand comprises:

a wing shaft parallel to the shaft of the ejecting roller,

a wing gear fixed to an outer circumference of the wing shaft and
engaged with the gear of the ejecting roller,

a wing, an end of which is rotatably connected to the wing shaft and
guides a path of the paper which is ejected, and

a friction clutch which transmits a rotation force of the wing gear to the
wing.

3. The paper ejecting mechanism of claim 2, wherein the paper stand further
comprises:

a cylindrical member which is rotatably installed on the outer circumference of the wing
shaft; and

a connection part which extends from the cylindrical member and is connected to the
wing.

4. The paper ejecting mechanism of claim 2, wherein the friction clutch comprises a
clutch spring installed between the wing gear and a cylindrical member.

5. The paper ejecting mechanism of claim 4, wherein the friction clutch further comprises a friction member fixed to the cylindrical member between the clutch spring and the cylindrical member.

6. The paper ejecting mechanism of claim 3, wherein the wing is upwardly inclined at a predetermined angle with respect to the ejecting direction when supporting the paper.

7. The paper ejecting mechanism of claim 6, wherein an end of the wing in the ejecting direction is higher than a flat surface formed by a contact side of the ejecting roller when supporting the paper.

8. The paper ejecting mechanism of claim 3, wherein the wing protrudes downwardly in a direction perpendicular to the ejecting direction when the paper is dropped into the output tray.

9. The paper ejecting mechanism of claim 2, wherein the wing further comprises:
a first stopper is installed at an upper limit of the wing and
a second stopper is installed at a lower limit of the wing;
the paper ejecting mechanism further comprising:
at least one relay gear disposed between the ejecting roller and a feed roller such that
when the feed roller is rotated in the ejecting direction the wing is upwardly rotated, and the
rotation of the wing is stopped by the first stopper; and when the feed roller is rotated in a
reverse direction to the ejecting direction the wing is downwardly rotated, and the rotation of the
wing is stopped by the second stopper.

10. An ink-jet printer comprising:
a printing unit to print an image on a paper; and
a paper ejecting mechanism to support and eject the paper printed on by the printing
unit, wherein the paper ejecting mechanism comprises:
an ejecting roller which ejects a paper printed on by a printhead in an ejecting direction;
and
a paper stand installed under the ejecting roller which supports the paper when the
ejecting roller is rotated in an ejecting direction, and drops the paper into an output tray when
the ejecting roller is rotated in a reverse direction to the ejecting direction.

11. The ink-jet printer of claim 10, wherein
the ejecting roller comprises:
a gear and
a shaft; and
the paper stand comprises:
a wing shaft parallel to the shaft of the ejecting roller,
a wing gear fixed to an outer circumference of the wing shaft and
engaged with the gear of the ejecting roller,
a wing, an end of which is rotatably connected to the wing shaft and
guides a path of the paper which is ejected, and
a friction clutch which transmits a rotation force of the wing gear to the
wing.
12. The ink-jet printer of claim 11, wherein the paper stand further comprises:
a cylindrical member which is rotatably installed on the outer circumference of the wing
shaft; and
a connection part which extends from the cylindrical member and is connected to the
wing.
13. The ink-jet printer of claim 11, wherein the friction clutch comprises a clutch
spring installed between the wing gear and the cylindrical member.
14. The ink-jet printer of claim 13, wherein the friction clutch further comprises a
friction member fixed to the cylindrical member between the clutch spring and the cylindrical
member.
15. The ink-jet printer of claim 12, wherein the wing is upwardly inclined at a
predetermined angle with respect to the ejecting direction when supporting the paper.
16. The ink-jet printer of claim 15, wherein an end of the wing in the ejecting direction
is higher than a flat surface formed by a contact side of the ejecting roller when supporting the
paper.

17. The ink-jet printer of claim 12, wherein the wing protrudes downwardly in a direction perpendicular to the ejecting direction when the paper is dropped into the output tray.

18. The ink-jet printer of claim 11, wherein the wing further comprises:
a first stopper installed at an upper limit of the wing and
a second stopper installed at a lower limit of the wing;
the ink-jet printer further comprising:
at least one relay gear is disposed between the ejecting roller and a feed roller such that
when the feed roller is rotated in the ejecting direction the wing is upwardly rotated, and the
rotation of the wing is stopped by a first stopper installed inside a printer; and when the feed
roller is rotated in a reverse direction to the ejecting direction the wing is downwardly rotated,
and the rotation of the wing is stopped by a second stopper installed inside the printer.

19. The paper ejecting mechanism of claim 1, further comprising:
a star wheel or other roller or mechanism disposed on the ejecting roller to assist in
ejecting the paper printed on by the printhead in the ejecting direction.

20. The paper ejecting mechanism of claim 10, further comprising:
a star wheel or other roller or mechanism disposed on the ejecting roller to assist in
ejecting the paper printed on by the printhead in the ejecting direction.